Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

tangential pitting of autumnal tracheids. The change in the living pines is seen in the disappearance of thick-walled ray cells, the presence of large compound ray pits, the development of ray tracheids, and the loss of tangential pitting of autumnal tracheids. The type of hard pines represented by *P. resinosa* in North America and *P. silvestris* in Europe is "the most highly developed and specialized condition among living pines." The nut pines (of North America and Asia) have piciform lateral ray pits and thick-walled ray cells, and in these features they are the living pines that approach most nearly to the cretaceous pines. The hard pines of the United States, with the exception of *P. resinosa,* show a great range of variation from piciform to compound lateral ray pits; and the soft pines present a parallel series of gradations.—J. M. C.

Non-available water.—BOVIE[13] has tested the effect of salts upon the non-available water in a soil of crushed quartz. Aside from a full nutrient solution of 0.2 per cent, various amounts of NaCl, ranging from 0.05 to 0.6 per cent, were added. To 100 grams of soil 20 grams of solutions were added. After the plants had grown considerably and the soil moisture was nearly exhausted, the cultures were placed in a special drying chamber of relative humidity of 0.1. Soil was tested for contained moisture when the foliage began to wilt, and when it showed drying. The remaining water was essentially the same regardless of the amount of salt present. Assuming that none of the salts are absorbed by the plants, BOVIE finds that the soil water, at the close of the experiments, in some cases would contain more than 300 per cent of salts, and that much of it must be in the solid form in spite of greatly increased solubility in the thin water films. He also offers some evidence for the movement of water in soils of low water content in the form of vapor, a thing already emphasized by various workers.—WILLIAM CROCKER.

Transpiration stream.—ZIJLSTRA[14] finds that lowering the temperature of sections (20 cm. in length) of stem of intact plants to 0° C. for several days, even under the most favorable conditions for transpiration, does not lead to wilting of the foliage. It is assumed that this renders the living cells of the zone comparatively inactive, without injuring them and without producing injurious or blocking material. The results are contrary to those obtained by the same method by URSPRUNG, who used the results as an argument for the necessity of the activity of living cells to the continuity of the transpiration stream. ZIJLSTRA also conducted a number of experiments on the movement of 0.1 per cent *Säureviolett* (GRÜBLER) in living and dead stems. He also studied the behavior of plants in which lateral movement of water was made necessary by the ordinary method of incisions on opposite sides. Only the first set of experiments throws any new light on the question of the rise of sap.—WILLIAM CROCKER.

---

[13] BOVIE, WILLIAM T., The effects of adding salts to the soil on the amount of non-available water. Bull. Torr. Bot. Club **37**:273–292. 1910.

[14] ZIJLSTRA, K., Contributions to the knowledge of the movement of water in plants. Reprint from Koninklijke Akad. Wetenschappen te Amsterdam. 1910:574–584.

Phylogeny of Filicales.—BOWER[15] has begun the publication of a series of studies in the phylogeny of the Filicales, and the first paper presents the singular and poorly known genus *Plagiogyria*. It is grouped among the Polypodiaceae, and even merged with *Lomaria*, but the position is anomalous on account of the oblique annulus. Several species were secured, both oriental and occidental, and the results may be considered fairly representative for a genus of eleven species. The conclusions are that the genus is quite a distinct one, deserving to stand apart from *Lomaria* or any other genus; that it is relatively primitive, as shown by stelar structure, leaf traces, venation, etc.; that it has resemblances to the Simplices, but that its characters indicate that it is rightly placed among the Pterideae; and that its "mixed" sorus, without any "gradate" sequence of sporangia, combined with its primitive characters and its affinity to the Pterideae, shows that the Mixtae have probably come directly from the Simplices, rather than by any of the Gradatae.—J. M. C.

Geotropism and split stems.—SCHTSCHERBACK,[16] working in PFEFFER'S laboratory, has carried on a series of experiments on the geotropic reactions of split stems. In the main, *Lupinus albus* was used, for in this form the tissue strains between cortex and pith are slight. Splitting cuts the rate of growth even in the vertical position, but two equal halves grow with equal speed in that position. If the two halves are placed horizontally, with the split faces together and horizontal, the lower half is favored in its growth and the upper half greatly inhibited, or even entirely stopped in most cases. Restoring the two halves to their normal vertical position restores them to equal growth, and rotating them 180° on the horizontal axis, to give an interchange of position, gives an interchange of rates of growth. The same geotropic inhibition and favoring of growth occurs in the two separated halves of the stem as occur in their intact condition.—WILLIAM CROCKER.

Relation of living cells to the rise of sap.—RORHARDT,[17] in his voluminous article on the part played by living cells in the rise of sap, has followed the method of wearying the reader with the publication of his notebook, instead of preparing a concise statement of his methods and results. Of the 125 different species of herbs and shrubs native to Germany, representing various monocotyl and dicotyl

---

[15] BOWER, F. O., Studies in the phylogeny of the Filicales. I. *Plagiogyria*. Annals of Botany **24**:423–450. *pls. 32, 33. figs. 5.* 1910.

[16] SCHTSCHERBACK, JOHANN, Die geotropische Reaktion in gespaltenen Stengeln. Beih. Bot. Centralbl. **25**^{1}:358–386. 1910.

[17] RORHARDT, P. A., Ueber die Beteiligung lebender Zellen am Saftsteigen bei Pflanzen von niedrigen Wuchs. Beih. Bot. Centralbl. **25**^{1}:243–357. *figs. 2.* 1910.